20-35411

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

350 MONTANA, et al.,

Plaintiffs-Appellants,

v.

DAVID BERNHARDT, Secretary of the Department of the Interior, et al.,

Defendants-Appellees,

SIGNAL PEAK ENERGY, LLC,

Intervenor for Defendants-Appellees.

On Appeal from the U.S. District Court for the District of Montana
9:19-cv-00012-DWM
Hon. Donald W. Molloy, Senior District Judge

BRIEF OF *AMICUS CURIAE* INSTITUTE FOR POLICY INTEGRITY AT NEW YORK UNIVERSITY SCHOOL OF LAW IN SUPPORT OF PLAINTIFFS-APPELLANTS AND REVERSAL

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases **Page(s)**

Cases (cont'd) **Page(s)**

Statutes

Regulations and Federal Register Notices

Regulations and Federal Register Notices (cont'd) **Page(s)**

Other Authorities

Other Authorities (cont'd) **Page(s)**

Other Authorities (cont'd) **Page(s)**

INTEREST OF AMICUS CURIAE

The Institute for Policy Integrity at New York University School of Law ("Policy Integrity") submits this brief as *amicus curiae* in support of Plaintiffs' challenge to the Office of Surface Mining's ("OSM") approval of an application to expand the Bull Mountains Mine (the "Project").

Policy Integrity is a nonpartisan think tank dedicated to improving government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and environmental policy. An area of particular concern for Policy Integrity is the proper consideration of uncertainty in administrative decisionmaking, especially with regard to assessing the environmental and social benefits and costs of agency action. Policy Integrity has published numerous reports and scholarly articles advising agencies on the best methods to assess uncertain impacts and to rationally weigh these impacts along with other costs and benefits.

Policy Integrity has published considerable scholarship on the Social Cost of Carbon, a methodological tool that many administrative agencies have used to assess the significance of climate impacts from administrative actions. Our director, Professor Richard L. Revesz, has co-authored articles with Nobel Prize winner Kenneth Arrow and other prominent economists on the Social Cost of Carbon, among his more than eighty articles and books on environmental and administrative

law.[1] Richard L. Revesz, Kenneth Arrow, et al., *The Social Cost of Carbon: A Global Imperative*, 11 Rev. Envtl. Econ. & Pol'y 172 (2017) ("Revesz & Arrow (2017)"); *Global Warming: Improve Economic Models of Climate Change*, 508 Nature 173 (2014). And our legal director, Jason A. Schwartz, has published numerous academic articles supporting the use of the Social Cost of Carbon to assess the climate impacts of agency action. *See, e.g.*, Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 Colum. J. Envtl. L. 203 (2017) ("*Think Global*").

Harnessing this academic expertise, Policy Integrity regularly participates in administrative and judicial proceedings involving federal decisions with major implications for greenhouse gas emissions and climate harms, including those challenging environmental assessments under the National Environmental Policy Act ("NEPA"). *See, e.g.*, Briefs for Institute for Policy Integrity as *Amicus Curiae*, *Vecinos Para el Bienestar de la Comunidad Costera v. Fed. Energy Reg. Comm'n*, No. 20-1045 (D.C. Cir. filed June 17, 2020) (challenging sufficiency of agency's consideration of climate impacts in approving natural-gas pipeline); *WildEarth Guardians v. Bureau of Land Mgmt.*, 870 F.3d 1222 (10th Cir. 2017) (criticizing

[1] A full list of publications can be found on Prof. Revesz's faculty profile, https://its.law.nyu.edu/facultyprofiles/index.cfm?fuseaction=profile.publications&personid=20228.

finding that approved coal production would not contribute to climate change); *Zero Zone, Inc. v. Dep't of Energy*, 832 F.3d 654 (7th Cir. 2016) (supporting agency's use of Social Cost of Carbon). Most relevant for this proceeding, Policy Integrity submitted comments on the Draft Environmental Assessment for the Project. *See* E.R. 483–502.

Echoing those comments, Plaintiffs here argue that OSM violates NEPA by failing to meaningfully evaluate the scope or severity of the Project's climate impacts or give those impacts the same attention as the Project's economic benefits, despite the availability of a widely-used tool—the Social Cost of Carbon—that would allow the agency to do so. Policy Integrity's expertise on the Social Cost of Carbon and the proper treatment of uncertainty in analyses conducted under NEPA give it a unique perspective on this claim.

SUMMARY OF ARGUMENT

As Plaintiffs argue, OSM fails to meaningfully or rationally assess the scope and severity of the Project's considerable climate harms, or treat those costs on par with the Project's economic benefits. This brief offers three main points to support Plaintiffs' argument that OSM's assessment of climate impacts violates NEPA.

First, OSM's assessment not only fails to "evaluate the incremental impact that [the Project] will have on climate change" as NEPA requires, *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216–17 (9th Cir.

2008) (internal quotation marks omitted), but also disregards key impacts and deploys irrational logic. For instance, the agency's dismissal of the Project's emissions as a small fraction of the global total—an approach this Court rejects, *id.*—fails to properly contextualize a huge amount of emissions and treats the associated climate costs as essentially worthless. The agency's cursory qualitative description of climate change also trivializes key social and economic harms and does not facilitate a meaningful analysis of the Project's actual effects. The contextualization lacking in OSM's assessment sharply contrasts with an application of the Social Cost of Carbon, which, as detailed below, reveals that the Project will produce a minimum central estimate of nearly $9 billion in climate harm. This figure is hardly insignificant, and disclosing it would surely assist OSM in assessing and contextualizing the Project's "environmental impact," 42 U.S.C. § 4332(2)(C)(i).

Second, while OSM continually touts the Project's economic benefits—monetizing such projections as total revenues, taxes and royalties, and wages, E.R. 230—such benefits pale in comparison to the Project's climate harms. In fact, as detailed below, OSM's own figures reveal that the Project's full economic benefit totals, at most, just $3 billion—about one-third of its expected climate cost. By monetizing the Project's economic benefit but not its environmental harm, the agency sidesteps the "balancing process" that NEPA mandates and papers over fact that "environmental costs … outweigh economic and technical benefits." *Calvert*

Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n, 449 F.2d 1109, 1113 (D.C. Cir. 1971). This Court prohibits agencies from "put[ting] a thumb on the scale" in such fashion. *Ctr. for Biological Diversity*, 538 F.3d at 1198.

Third, while OSM points to alleged uncertainty in the proper valuation of the Social Cost of Carbon in attempt to reject the tool, it overstates this uncertainty, subjects climate impacts to a higher standard than other uncertain effects that the agency quantifies and monetizes, and improperly uses the fact "that there is a range of [plausible] values" to assign carbon emissions no value at all, *id.* at 1200. For instance, OSM disregards the fact that that the federal Interagency Working Group on the Social Cost of Greenhouse Gases ("Working Group") developed a central value of the Social Cost of Carbon that many federal agencies have applied to assess climate impact. Moreover, the stated reasons that OSM provides for its rationale are inapposite. The agency relies primarily on assertions about uncertainty from a Bureau of Land Management rule that actually did monetize greenhouse gas emissions, while misleadingly citing economists who provided the methodologies and valuations that the Working Group relied on to develop its social cost estimates.

By failing to assess the significance of the Project's greenhouse gas emissions while arbitrarily rejecting the best tool for doing so, OSM lacks a reasonable basis to conclude that the Project will not have a significant environmental impact. Its determination to approve the Project is therefore arbitrary and capricious.

ARGUMENT

I. OSM's Cursory Evaluation of Climate Damages Disregards Key Impacts, Exhibits Irrational Logic, and Lacks the Meaningful Assessment that NEPA Requires

Despite the fact that the Project will result in considerable greenhouse gas emissions that will cause billions of dollars in total climate harm, OSM pays these impacts virtually no attention in its environmental analysis, as it merely quantifies the volume of emissions before dismissing them as "minor," E.R. 135, and "not … significant," E.R. 65. This cursory analysis is insufficient under NEPA.

"[T]he key requirement of NEPA" is to "consider and disclose the *actual environmental effects* in a manner that … brings those effects to bear on [the agency's] decisions." *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 96 (1983) (emphasis added). Merely listing the quantity of emissions is insufficient if the agency "does not reveal the meaning of those impacts in terms of human health or other environmental values," since "it is not releases of [pollution] that Congress wanted disclosed" but rather "the effects, or environmental significance, of those releases." *NRDC v. NRC*, 685 F.2d 459, 486–87 (D.C. Cir. 1982), *rev'd on other grounds, Balt. Gas & Elec. Co.*, 462 U.S. at 106–07.[2] And as this Court held in

[2] NEPA regulations in place at the time of the decision under review reflect this mandate by requiring agencies to assess "effects and their significance," 40 C.F.R. § 1502.16, which "requires consideration of both context and intensity," *id.* § 1508.27, of the "ecological …, economic, social, or health" impacts caused by the

Center for Biological Diversity v. National Highway Traffic Safety Administration, a climate analysis that just projects greenhouse gas emissions and compares them to nationwide or global totals does not meet this standard. 538 F.3d at 1215–16. As this Court explained, that approach fails to "evaluate the incremental impact that these emissions will have on climate change" or "provide the necessary contextual information about the cumulative and incremental environmental impacts" that NEPA demands. *Id.* at 1216–17 (internal quotation marks omitted).

OSM's analysis here exhibits a virtually identical failure as the analysis that this Court rejected in *Center for Biological Diversity*, and further illustrates the failures of that approach in terms of "assessing the effects of [the agency's] actions on global warming," *id.* at 1217. For one, OSM's comparison of the Project's emissions to much larger totals suggests that a huge amount of emissions may be unimportant, *see id.* at 1216 (providing similar comparison), yet closer inspection exposes the fallacy of this logic. A basic analogy makes the point: While OSM dismisses the Project's carbon dioxide emissions because they comprise 0.44 percent of the annual global total, E.R. 135, a hypothetical action that resulted in $385 billion

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agency's actions, *id*. § 1508.8. Although these regulations were recently repealed and replaced, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020), they govern this determination and, in any event, their replacement cannot affect NEPA's statutory requirements. The other Federal Register provisions referenced in this brief were not substantially altered by the July 2020 revisions, but for the sake of consistency this brief provides citations to their pre-revised version.

in economic cost or benefit—orders of magnitude larger than the Project's economic benefit, *see* E.R. 230, and roughly equal to the annual gross domestic product of Ireland—would have the same relative effect (0.44 percent) if presented as a percentage of global gross domestic product.[3] Of course, however, that impact is not "minor," *contra* E.R. 135.

By disregarding the Project's greenhouse gas emissions because they comprise a small percentage of global emissions, OSM falls victims to probability neglect, a common mental heuristic whereby small probability risks are irrationally reduced to zero. *See* Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law*, 112 Yale L.J. 61 (2002), *cited in* E.R. 486. This heuristic is particularly problematic for assessing climate impacts, as "[t]he global nature of climate change and greenhouse-gas emissions means that any single … project likely will make up a negligible percent of state and nation-wide greenhouse gas emissions." *WildEarth Guardians v. Bureau of Land Mgmt.*, 457 F. Supp. 3d 880, 894 (D. Mont. 2020). In

[3] Global gross domestic product was $87.7 trillion in the most recent fiscal year. *GDP (current US$)*, WORLD BANK, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD (last visited Nov. 19, 2020). $87.7 trillion multiplied by 0.0044 (i.e., 0.44 percent) equals $385.88 billion. The gross domestic product of Ireland is $388.7 billion. *Id.*

Other glaring examples abound. For instance, an action that resulted in 251,000 fatalities—about the reported U.S. death count from Covid-19, as of this writing—would account for 0.44 percent of the recent annual global average of 57.2 million deaths. *World Population Prospects*: *Deaths—Both Sexes*, UNITED NATIONS (2019), https://population.un.org/wpp/Download/Standard/Mortality/.

addition to *Center for Biological Diversity*, therefore, several courts have rejected analyses that trivialize emissions through comparison to larger totals. *See, e.g.*, *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014); *California v. Bernhardt,* No. 18-5712, 2020 WL 4001480, at *36 (N.D. Cal. July 15, 2020).

On top of its misguided percentage comparison, OSM's failure to properly contextualize the Project's climate impacts is evinced by the total inadequacy of its qualitative assessment. While OSM recognizes some consequences of climate change, it focuses its analysis predominantly on geological effects while saying little about the resulting "social [and] economic" impacts, 42 U.S.C. § 4331. *See* E.R. 217–22. For instance, OSM briefly recognizes that climate change may harm human health, but then immediately—and without analysis of the Project's specific incremental contribution to climate or related health effects—dismisses these effects as "relatively small." E.R. 218. Other major effects of climate change—such as property damages from sea-level rise, increased wildfire and extreme weather events, and impacts to water resources and agriculture—are also omitted entirely or mentioned only in passing. *Compare* E.R. 217–22 (OSM's assessment), *with* E.R. 446–56 (declaration of Dr. James E. Hansen). OSM distinctly does not assess the degree to which the Project itself will contribute to these numerous harms.

OSM's perfunctory assessment illustrates several reasons why a qualitative analysis—that is, projecting emissions and generically describing impacts of climate change, without attributing any degree of harm to the proposal—is vastly inferior to a quantitative analysis at contextualizing emissions. For one, nonmonetized effects are often irrationally treated as worthless. *See* Richard L. Revesz, *Quantifying Regulatory Benefits*, 102 Cal. L. Rev. 1423, 1434–35, 1442 (2014), *cited in* E.R. 487. And due to salience bias, both the public and agency decisionmakers will tend to focus more on information that is prominent or emotionally striking, such as high monetary estimates, while disregarding less prominent information like generic descriptions or miniscule percentages. *See, e.g.*, Judgment Under Uncertainty: Heuristics and Biases 192–94 (Daniel Kahneman et al. eds., 1982). The Project's revenue and payroll impacts, for instance, could have been presented as a tiny percentage of global figures or qualitatively as general effects on sectoral labor markets and government operations. Yet OSM instead provides monetized projections to better understand the nature and degree of these effects. E.R. 230.

The Social Cost of Carbon would have provided similar context to enable OSM to precisely attribute incremental climate harm to the Project. The Social Cost of Carbon measures the marginal damages caused by an additional ton of carbon dioxide emission, Appellants Br. 8–10, assessing incremental "agricultural and forestry impacts, coastal impacts due to sea level rise, impacts to the energy and

water sectors, impacts from extreme weather events, vulnerable market sectors impacted by changes in energy use, human health impacts including malaria and pollution, outdoor recreation impacts and other non-market amenities, impacts to human settlements and ecosystems, and some catastrophic impacts," E.R. 486. Applying the Social Cost of Carbon would therefore allow OSM to "evaluate the incremental impact that [the Project] will have on climate change" as NEPA requires. *Ctr. for Biological Diversity*, 538 F.3d at 1216 (internal quotation marks omitted).

Instead of following this sensible approach, however, OSM does not identify the Project's actual climate impact or meaningfully assess the significance or severity of those effects. Its determination to approve the Project without meaningful analysis of climate impacts is arbitrary and capricious.

II. OSM's Lopsided Analysis Overlooks Overwhelming Evidence that the Project's Environmental Cost Vastly Exceeds Its Economic Benefit

While OSM's failure to meaningfully evaluate climate impacts is unlawful by itself, the agency compounds its error by simultaneously quantifying and monetizing the Project's economic benefits. In doing so, OSM "inconsistently and opportunistically frame[s] the [Project's] costs and benefits." *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011). Had the agency provided a fair comparison, it would have had little choice but to conclude that the Project's climate costs vastly exceed its economic benefits.

The math here is fairly straightforward. Using the Social Cost of Carbon, one can assess the Project's incremental climate cost by multiplying the tons of carbon that will result from the Project by the value of the climate damages caused by each ton. *See* Appellants Br. 9. The Project incrementally increases carbon emissions by 190 million tons, E.R. 134, and the Working Group's central value of the Social Cost of Carbon—which is widely regarded as the best estimate of incremental climate damage, *see infra* note 11—is about $52 in today's dollars per metric ton emitted in 2020. *See* Working Group on the Social Cost of Greenhouse Gases, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 3–4 (2016) ("*Technical Update*"). Basic arithmetic therefore reveals the Project's central climate cost to be at least $9 billion.[4]

[4] The Project will result in the incremental release of 190 million short tons of greenhouse gases (not including 50 million short tons that would occur from the mine without the Project). E.R. 134. 190 million short tons equals about 172.36 million metric tons. The Working Group's central estimate of the Social Cost of Carbon is $43 for emissions in the year 2020, in 2007$ (with increasing estimates for each year thereafter). *Technical Update* at 3–4. Adjusting for inflation using the Consumer Price Index Inflation Calculator, this equals approximately $52 per metric ton. 172.36 million metric tons multiplied by $52 equals $8.96 billion. Note that this is a lower-bound central estimate, since it assumes that all emissions from the Project occur in the year 2020. The Social Cost of Carbon increases each year as incremental climate impacts intensify with higher background concentrations of greenhouse gases, meaning that emissions from future years are valued at more than $52 per metric ton. Working Group valuations could also be used to produce a range of damage estimates. *See* Appellants Br. 60 (projecting that Project will "cause between $3.2 billion and $32.5 billion in damages").

Calculating the Project's total economic benefit is no more difficult. In economics, the total societal benefit of a particular good or service equals the good or service's market value, unless "there are significant non-market external … benefits associated with the commodity." E.R. 474. Because no such non-market benefits are associated with coal, Policy Integrity advised OSM—and the agency does not refute—that "the value of coal in the marketplace … is the best approximation of how much consumers value the welfare they derive from using the energy generated by coal." E.R. 487–88. In other words, "the competitive market mine mouth coal price reflects the [Project's] full economic benefit." E.R. 474. And here, OSM's analysis reveals that it has estimated the total value of extracted coal to be about $3 billion in today's dollars.[5] Notably, this is a small fraction of the

[5] While OSM does not directly report the total value of extracted coal, it does estimate that the Project will result in 86.8 million tons of coal, E.R. 95, that will sell for $32.50 per ton, E.R. 231. 86.8 million multiplied by $32.50 equals $2.821 billion. Though it is not entirely clear, the $32.50 estimate appears to be in 2016$. Adjusted for inflation from using the Consumer Price Index Inflation Calculator, $2.821 billion in 2016$ equals almost exactly $3 billion in 2019$.

OSM's reported tax revenue projections confirm this amount. For instance, OSM estimates that the Project will result in $112.84 million (in 2016$) in revenues from severance taxes, E.R. 230, which are set at a rate of 4 percent, or 1/25th of the coal's sale value, E.R. 226. In order to arrive at that revenue figure, therefore, OSM must have calculated the total value of coal extracted from the Project to be $2.821 billion—that is, 25 times the projected severance tax revenues. As noted above, this equals $3 billion in 2019$ after adjusting for inflation.

OSM's other economic estimates appear to be based off of the same revenue projection. For instance, the gross proceedings tax revenues of $129 million (split between the state and county share), E.R. 230—which represents 2.5 percent of the

Project's climate cost. *See* E.R. 470–71 (conclusion from Power Consulting's expert report that Project's climate cost vastly exceeds its economic benefit).

Of course, OSM never makes such a comparison, because while the agency projects beneficial economic impacts from the Project such as "projected changes in employment, labor income, and economic output," E.R. 229; *see also* E.R. 230 (providing monetized estimates), it provides no comparable measurement of the Project's climate costs. But "NEPA mandates a rather finely tuned and systematic balancing analysis" of "environmental costs" against "economic and technical benefits," *Calvert Cliffs'*, 449 F.2d at 1113 (internal quotation marks omitted),[6] and OSM's divergent treatment of the Project's impacts—quantifying economic benefits while disregarding far larger environmental costs—violates this requirement.

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value of all coal sold before 2021, and 5 percent of that value thereafter, E.R. 226—is consistent with a total coal value of about $2.8 billion (in 2016$). The federal and state royalty estimates, E.R. 230, can also be backed out in similar fashion to reach the same projection of coal revenue.

It is worth noting that OSM's market price estimate of $32.50 per saleable ton—and thus all of its revenue projections, which are based off this input— appears to be an overestimate, as data from the U.S. Energy Information Administration suggests that the recent market value of coal from the Bull Mountains Mine was about $24 per ton. E.R. 471. While this brief uses OSM's projections, those projections should therefore be considered high-end estimates.

[6] *See also, e.g.*, *Chelsea Neighborhood Ass'ns v. U.S. Postal Serv.*, 516 F.2d 378, 386 (2d Cir. 1975) ("NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities."); *Sierra Club v. Sigler*, 695 F.2d 957, 978–79 (5th Cir. 1983) (holding that NEPA "mandates at least a broad, informal cost-benefit analysis," and so agencies must "fully and accurately" and "objectively" assess environmental, economic, and technical costs).

Indeed, on numerous occasions courts have struck down agency actions for failing to give climate impacts the same consideration as economic effects. Most pertinently, this Court held in *Center for Biological Diversity* that because the agency had monetized other uncertain costs and benefits of its vehicle fuel efficiency standard, its "decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious." 538 F.3d at 1203. Likewise, in a case involving federal coal leasing with facts that largely mirror the present case, the U.S. District Court for the District of Colorado explained that it violated NEPA for the defendant agency "to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible," specifically referencing the Social Cost of Carbon. *High Country*, 52 F. Supp. 3d at 1191. Likewise, OSM's consideration here of "specific economic benefits" such as "coal recovered … and royalties" renders unlawful its lack of similar attention to climate costs. *Id.* at 1190.

OSM attempts to skirt this precedent by claiming that "without a complete monetary cost-benefit analysis, which would include the social benefits of the proposed action to society," monetizing climate costs "would be unbalanced, potentially inaccurate, and not useful in facilitating an authorized officer's decision." E.R. 222–23. But this statement is misleading and inaccurate. Namely, while OSM alleges that the "increased economic activity" that it projects "in terms of revenue,

employment, labor income, total value added, and output … is simply an economic impact, rather than an economic benefit," E.R. 223, this statement is incorrect because, as noted above, OSM effectively monetized the full benefits of the Project by calculating total market value of generated coal (i.e., the "output"). By failing to pay environmental costs the same consideration, OSM unlawfully "put[s] a thumb on the scale." *Ctr. for Biological Diversity*, 538 F.3d at 1198.

Moreover, even assuming OSM's premise that it has not monetized the Project's social benefits, this would not justify the agency's disregard for "research methods generally accepted in the scientific community," 40 C.F.R. § 1502.22(c)(4), to assess the severity of the Project's climate costs. As applicable regulations acknowledge, when monetization of particular costs or benefits is relevant to the choice among alternatives, that analysis can be presented alongside "any analyses of unquantified environmental impacts, values, and amenities." *Id.* § 1502.23. And whether or not OSM can or has monetized any other impact, NEPA requires the agency to disclose and contextualize the "actual environmental effects" of the Project's greenhouse gas emissions. *Balt. Gas & Elec. Co.*, 462 U.S. at 96. Using the Social Cost of Carbon to monetize climate damages is a straightforward and readily available way to do exactly that, and as detailed above, OSM provides no other reasonable contextualization of actual climate effects.

Accordingly, OSM's failure to assess the severity of the Project's climate harms—particularly when the agency monetizes the Project's economic benefits—renders its analysis arbitrary and capricious.

III. OSM's Claims About Uncertainty in the Social Cost of Carbon Are Exaggerated and Provide No Rational Basis to Ignore the Tool

Despite its legal obligation to assess the severity of climate harms and the availability of the Social Cost of Carbon for doing so, OSM offers several excuses for its refusal to apply this methodology. Among others, the agency alleges that the Social Cost of Carbon "provides little benefit … for project level analyses" because it supplies a "dollar cost figure [that] is generated in a range." E.R. 223. But this explanation is irrational for two principal reasons, as OSM downplays its obligation to consider uncertain impacts and drastically exaggerates the uncertainty in the Social Cost of Carbon.

First, the mere fact that there is some uncertainty in the Social Cost of Carbon value provides no reason to ignore the methodology entirely. "Regulators by nature work under conditions of serious uncertainty," *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1221 (D.C. Cir. 2004), and climate impacts are not unique in this regard. Rather, as this Court recognizes, "[a]gencies are often called upon to confront difficult administrative problems armed with imperfect data," and "the proper response to that problem is for the [agency] to do the best it can with the data it has." *Mont. Wilderness Ass'n v. McAllister*, 666 F.3d 549, 559 (9th Cir. 2011).

"Reasonable forecasting and speculation is … implicit in NEPA" because the statute requires agencies "to predict the environmental effects of proposed action before the action is taken." *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973). Thus "it is entirely proper[] and necessary" for an agency to make "educated predictions" about its proposal's uncertain impacts. *Carolina Envtl. Study Grp. v. United States*, 510 F.2d 796, 799 (D.C. Cir. 1975).[7]

Here, for instance, OSM provides pinpoint projections of economic impacts such as royalties and revenues, E.R. 230, even though these estimates, too, are subject to wide uncertainty and rely on projections of such variable factors as coal prices and the state of interconnected global energy markets. "Energy market projections are subject to much uncertainty because many of the events that shape energy markets—as well as future developments in technologies, demographics, and

[7] Regulations and guidance from the Council on Environmental Quality ("CEQ") echo this mandate. For instance, CEQ regulations recognize that agencies may confront "incomplete or unavailable information" as they assess "reasonably foreseeable significant adverse effects on the human environment," and so instruct agencies to employ "theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(a), (c)(4).

CEQ guidance similarly emphasizes the importance of reasonable forecasting in evaluating uncertain impacts. One guidance document, for instance, explains that agencies must "make a good faith effort to explain the effects that are not known but are reasonably foreseeable," and that while agencies need not "engage in speculation" in the face of "total uncertainty," they must engage in "informed judgment" about the scope or likelihood of "reasonably foreseeable occurrences," and "cannot ignore these uncertain, but probable, effects." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,031 (Mar. 23, 1981) (internal quotation marks omitted).

resources—cannot be foreseen with certainty." U.S. Energy Info. Admin., Annual Energy Outlook 2020 at 3 (2020).[8] By forecasting speculative beneficial economic impacts, OSM "inconsistently and opportunistically fram[es] the [Project's] costs and benefits," *Bus. Roundtable*, 647 F.3d at 1148–49, and illustrates how the agency could have engaged in reasonable estimation to also forecast the Project's climate impacts despite some uncertainty.

By failing to do so, OSM effectively treats the Project's greenhouse gas emissions as worthless or insignificant. *See* E.R. 135, 223 (failing to measure the Project's "incremental impacts … on the environment" yet nonetheless concluding that such contributions are "minor"). But as this Court has already explained, this flawed approach reveals the problem with failing to apply reasonable valuation methodologies: While there is a "range of values" for the Social Cost of Carbon, "the value of carbon emissions reduction is certainly not zero." *Ctr. for Biological Diversity*, 538 F.3d at 1200. This is consistent with the broader principle that "[t]he mere fact that the magnitude of [a regulatory impact] is uncertain is no justification for disregarding the effect entirely." *Pub. Citizen*, 374 F.3d at 1219.

Second, notwithstanding that OSM's uncertainty argument fails on its face, the agency also overstates the uncertainty in the Social Cost of Carbon. While the

[8] *Available at* https://www.eia.gov/outlooks/aeo/pdf/AEO2020%20Full%20Report.pdf.

agency suggests that the Social Cost of Carbon valuation lies in too broad a range to be useful, E.R. 223, the values recommended by the Working Group are in fact quite manageable. Most significantly, the Working Group provided a "central value" for the Social Cost of Carbon—$42 (in 2007$) for each ton emitted in the year 2020. *Technical Update* at 4. In addition to the central value, the Working Group provided a range of Social Cost of Carbon values—from $12 to $62 (in 2007$) for each ton emitted in the year 2020—for agencies to assess whether alternate assumptions about the discount rate (that is, the amount that future damages are reduced when converting into present value) affect their determination that an action is in the public interest. *Id.*[9]

Because of the simplicity provided by a single central value, agencies often prioritize the central estimate when assessing climate impacts. Earlier this year, for example, the Department of Energy acknowledged that the Working Group's estimates represent "the best science available," and applied both its central Social Cost of Carbon value and its value range to assess the benefits of revised energy-efficiency standards and compare them to regulatory costs. Energy Conservation Program: Energy Conservation Standards for Uninterruptible Power Supplies, 85

[9] The Working Group also reported a "high impact" Social Cost of Carbon, equaling $123 for year 2020 emissions (in 2007$), to allow agencies to test the sensitivity of their decisions to counting somewhat more uncertain climate risks. *Technical Update* at 4.

Fed. Reg. 1447, 1477–80 (Jan. 10, 2020). The fact that agencies routinely apply Social Cost of Carbon values when considering regulations belies OSM's argument that the metric is too uncertain to aid administrative decisionmaking. *See Think Global* at 270–84 (listing all uses by federal agencies through mid-2016).

OSM fails to acknowledge that the Working Group developed a central Social Cost of Carbon value that has been used by federal agencies. It instead cites a few sources in attempt to argue that the Social Cost of Carbon is too uncertain to estimate, but those sources cannot support this proposition. For instance, OSM relies on a 2018 analysis from the Bureau of Land Management ("BLM") that discusses sources of uncertainty in valuing the Social Cost of Carbon. E.R. 223. But OSM omits a key detail: namely, that BLM monetized greenhouse gas emissions in that analysis despite recognizing uncertainty. Bureau of Land Mgmt., Regulatory Impact Analysis for the Proposed Rule to Rescind or Revise Certain Requirements of the 2016 Waste Prevention Rule 6 (2018).[10] This analysis therefore demonstrates, contrary to OSM's argument, that uncertainty in the exact social-cost value does not preclude estimation.[11]

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[10] *Available at* https://www.regulations.gov/document?D=BLM-2018-0001-0002.

[11] Although BLM valued greenhouse gas emissions in that rule, it bucked the Working Group's estimates in favor of far lower estimates that purport to look only at domestic impacts. A federal district court struck down that methodology as irrational and concluded that BLM's valuation of the Social Cost of Methane was

Nor do the five academic articles that OSM briefly cites, E.R. 223, exhibit a degree of uncertainty that may preclude the agency's ability to evaluate climate impacts. In fact, three of the authors that OSM cites—Anthoff & Tol,[12] Nordhaus,[13] and Hope[14]—developed the very models that served as the basis for the Working Group's estimates.[15] The Working Group—which included representation from the Department of the Interior—explained that these papers allowed for a "rigorous approach to accounting for quantifiable uncertainty using multiple analytical techniques." *Technical Update* at 20. The National Academies of Sciences has also

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too low. *California*, 2020 WL 4001480, at *24–28. In doing so, the court recognized that there is broad "consensus that [the Working Group's] estimates constitute the best available science about monetizing the impacts of greenhouse gas emissions." *Id.* at *25. Prominent economists and academics broadly agree. *See, e.g.*, Revesz & Arrow (2017).

[12] David Anthoff & Richard S. J. Tol, *The Uncertainty About the Social Cost of Carbon: A Decomposition Analysis Using FUND*, 117 Climate Change 515 (2013), *cited in* E.R. 223 & *Technical Update*, passim. FUND is one of the three models used by the Working Group to develop its Social Cost of Carbon estimates. *Technical Update* at 9–13.

[13] William Nordhaus, *Revisiting the Social Cost of Carbon*, 114 Proc. Nat'l Acad. Scis. 1518 (2017), *cited in* E.R. 223. Nordhaus's DICE model is another model used by the Working Group. *Technical Update* at 3. As this paper was not yet published when the Working Group released its estimates, the Working Group relied on prior papers by Nordhaus on the DICE model. *Technical Update* at 7–9.

[14] Chris Hope, *Critical Issues for the Calculation of the Social Cost of CO2: Why the Estimates from PAGE09 Are Higher Than Those from PAGE2002*, 117 Climate Change 531 (2013), *cited in* E.R. 223 & *Technical Update*, passim. PAGE is the third model used by the Working Group. *Id.* at 13–15.

[15] A fourth paper that OSM cites simply applies a version of the FUND model. Stephanie Waldhoff et al., *The Marginal Damage Costs of Different Greenhouse Gases: An Application of FUND*, Kiel Institute for the World Economy (Economics Discussion Paper No. 2011–43), *cited in* E.R. 223.

recognized that the Working Group's valuations logically and systematically account for uncertainty in the Social Cost of Carbon. Nat'l Acads. Sci., Eng'g & Med., Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide 54–56 (2017), *cited in* E.R. 519. In other words, the Working Group rejected the exact argument that OSM now offers, and the agency provides no justification to dismiss its expert judgment.

Moreover, insofar as some economic literature diverges from the Working Group's range, it finds its estimates to be too conservative. For instance, Robert Pindyck, the final economist cited by OSM, explained that the Social Cost of Carbon "could well be higher than" the Working Group's estimates, emphasizing that the proper value "could easily be above $100 per metric ton" of carbon dioxide.[16] And a comprehensive survey of climate economists found that 69 percent believed that the Working Group's Social Cost of Carbon estimate was either accurate or too low, compared to just 8 percent saying it was too high. Peter Howard & Derek Sylvan, *Expert Consensus on the Economics of Climate Change* 18 (2015).[17] This "strong consensus," *id.* at 2, rebuts OSM's claim that the Social Cost of Carbon is too

[16] Robert S. Pindyck, Comments on Proposed Rule and Regulatory Impact Analysis 2–4 (Nov. 6, 2017), *available at* https://www.regulations.gov/contentStreamer?documentId=BLM-2017-0002-16107&attachmentNumber=1&contentType=pdf.

[17] *Available at* https://policyintegrity.org/files/publications/ExpertConsensusReport.pdf. The additional 23 percent of economists either offered no opinion or no response.

indeterminate to assess the Project's impacts. To the extent there is some uncertainty, therefore, it overwhelmingly suggests a higher Social Cost of Carbon valuation, and cannot excuse OSM's failure to give any value.[18]

Accordingly, OSM's reliance on uncertainty for failing to apply the Social Cost of Carbon is misguided. The agency's disregard for this useful methodology—culminating in its cursory analysis of climate impacts that concludes that billions of dollars in climate harm is minor and insignificant—is irrational.

[18] In its response to comments, OSM appears to suggest that any valuation of the Social Cost of Carbon should "omit the benefits and costs to citizens of other countries" and focus only on domestic impacts, which would produce a lower Social Cost of Carbon estimate. E.R. 270. But OSM presents no justification for excluding international effects from a NEPA analysis, instead citing an executive order governing the use of cost-benefit analysis for the purposes of regulation, not project-level decisions. *Id.* (citing Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993)). And as noted above, the Department of the Interior's attempt to apply a domestic-only Social Cost of Methane in rulemaking has been struck down in federal court for ignoring the best available science and lacking reasonable justification. *California*, 2020 WL 4001480, at *24–28. In particular, the Court noted that Interior "underestimates the *domestic* effects" of carbon emissions because it "ignores" such considerations as "impacts on 8 million United States citizens living abroad, … billions of dollars of physical assets owned by United States companies abroad[,]…and global migration and geopolitical security." *Id.* at *27.

CONCLUSION

For the foregoing reasons, this Court should vacate OSM's determination approving the Project.

Dated: November 20, 2020

Respectfully submitted,

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9th Cir. Case Number(s) 20-35411

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I hereby certify that on this 20th day of November 2020, a true and correct copy of the foregoing brief was filed with the Clerk of the United States Court of Appeals for the Ninth Circuit via the Court's CM/ECF system. Counsel for all parties are registered CM/ECF users and will be served by the appellate CM/ECF system.

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